

LINEAR REGRESSION MODELS



WHAT IS LINEAR REGRESSION?

Simply, linear regression is a statistical method for studying relationships between an independent variable X and Y dependent variable.

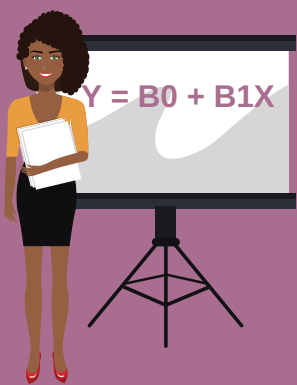
WHAT ARE LINEAR REGRESSION APPLICATIONS IN BUSINESS?



Most commonly, businesses use it to:

- To evaluate trends and make forecasts.
- To analyze the result of pricing on consumer behavior and buying intentions.
- To assess different types of risks and etc.

SIMPLE VS MULTIPLE LINEAR REGRESSION MODELS



WHAT IS SIMPLE LINEAR REGRESSION?

Simple linear regression means there is only one independent variable X which changes result on different values for Y.

Simple linear regression model/ formula is:

$$Y = B_0 + B_1X$$

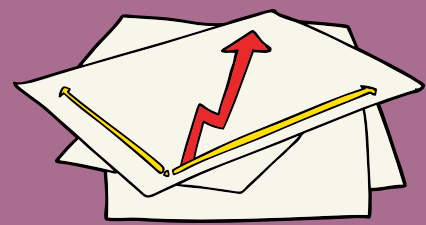
Where:

X – the value of the independent variable,

Y – the value of the dependent variable.

B₀ – is a constant (shows the value of Y when the value of X=0)

B₁ – the regression coefficient (shows how much Y changes for each unit change in X)



WHAT IS MULTIPLE LINEAR REGRESSION?

Multiple linear regression model is the most popular type of linear regression analysis. It is used to show the relationship between one dependent variable and two or more independent variables.

The following formula is a multiple linear regression model.

$$Y = B_0 + B_1X_1 + B_2X_2 + \dots + B_pX_p$$

Where:

X, X₁, X_p – the value of the independent variable,

Y – the value of the dependent variable.

B₀ – is a constant (shows the value of Y when the value of X=0)

B₁, B₂, B_p – the regression coefficient (shows how much Y changes for each unit change in X)

$$Y = B_0 + B_1X_1 + B_2X_2 + \dots + B_pX_p$$

